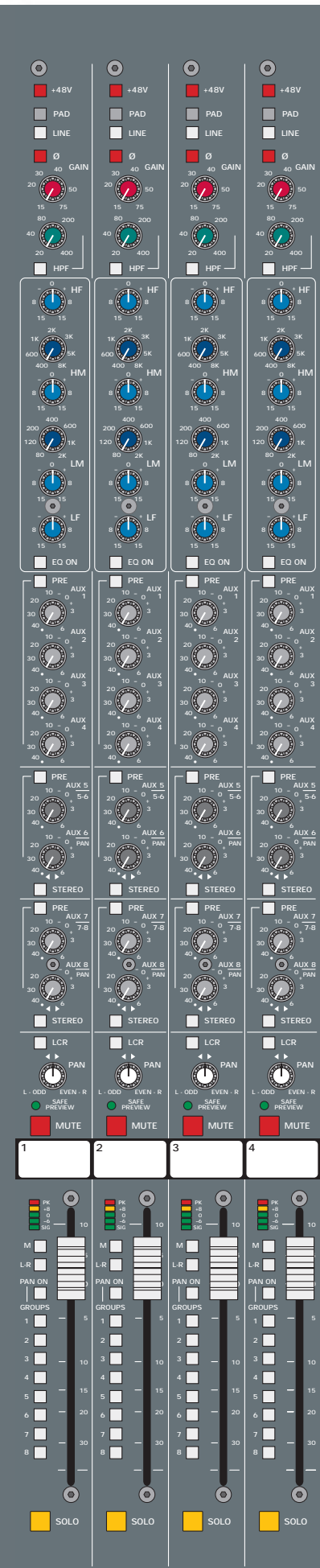




Application-Tailored Mixing





Mono Input Module Block

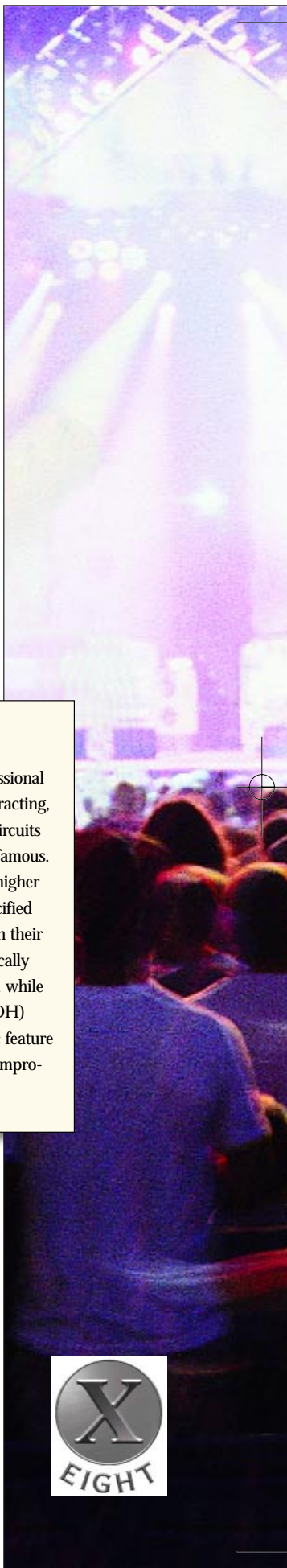
Introduction

Lean, Clean, and Uncompromisingly Professional Ideally Suited to Permanent Installation or Touring

A high-end console is outside the budget, but a cookie-cutter, mass market console is out of the question. If that's your dilemma, Crest has an elegant new solution – X-Eight. Channel for channel, these consoles deliver true value. Maintaining Crest's industry-leading quality and performance standards, X-Eight includes features that were either optional in previous consoles, or not available at all. X-Eight consoles may be configured in a variety of frame sizes for applications ranging from regional touring sound and corporate conventions to live theater production, to larger houses of worship, and major sports facilities.

X-Eight At A Glance

X-Eight-RT (Recording/Theater) and X-Eight-HS (House/Stage) are professional quality, lower cost consoles designed specifically for professional sound contracting, rental, and installed sound customers. Incorporating the same high-quality circuits and components for which mixing consoles from Crest Audio have become famous. Integrating two unique feature sets, X-Eight offers an easily affordable, yet higher quality alternative to the melange of one-size-fits-all consoles commonly specified today. Both X-Eight versions have identical input channel strips, but differ in their respective Group/Master sections. The X-Eight-RT includes features specifically matched to recording live performances as well as for theatrical applications, while the X-Eight-HS is a dual-function design equipped for Front-Of-House (FOH) and/or stage monitor duties. By combining a streamlined application-specific feature set with high-quality circuit design and construction, X-Eight offers an uncompromisingly professional console at a refreshingly moderate price.





A Crest First: Two Different Group/Master Options

The X-Eight embodies a unique response to the increasing specialization in contemporary performance audio. Quite simply, no single console design can possibly satisfy the full range of requirements without suffering from unnecessary complexity or unreasonable costs—usually both. That's why the X-Eight offers two entirely different Group/Master module combinations.

The X-Eight-RT version includes Tape Monitor inputs and individual Group Output controls that work separately from the Group faders. These features provide optimum facilities for theatrical special effects, for generating a separate broadcast mix, or for live performance recording and overdubbing with two separate stereo headphone mixes.

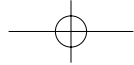
The X-Eight-HS version includes five-band output EQ and Group/Aux fader reverse facility. HS therefore easily doubles as a monitor mixer, since it can generate eight discrete monitor mixes (each with output EQ), plus four additional matrixed outputs for custom monitor mixes derived from Group, Left, Right, Mono and dedicated external input (which can be from the direct out of an input channel). Output EQ also makes the X-Eight-HS ideal for use with the new generation of powered speaker systems.

Professional Features for Today's Requirements

The X-Eight was designed following hundreds of hours of consultation with audio professionals around the world including touring sound mixers, installation contractors, and theatrical sound designers. The result is a feature set that goes well beyond what you might expect at the modest price of either version of the X-Eight.

Features:

- Exceptional input flexibility, including XLR, balanced 1/4" and RCA connectors on all stereo inputs
- Multiple outputs, including Alternate Output and dedicated Assistive Listening Output. All primary outputs are balanced
- Four band EQ on all inputs (including stereo) with Sweepable mid bands
- Sweepable High Pass Filter on all mono mic inputs
- Eight Auxiliary Sends, with Aux 5/6 and Aux 7/8 switchable for stereo operation
- Discrete bus assignment
- True LCR panning on Mono inputs
- Dedicated Mono mode
- Connectors on Mono and Stereo input modules for remote on/off
- Meter bridge standard: eleven mechanical meters (Groups, Left, Right, Center/Mono and Solo) with solid-state illumination



*Stereo
Input
(Line)
Module
Block*

Functions

Designed for Veterans and Rookies Alike

In many performance audio applications – community theaters and houses of worship, for example – the same audio console is used by people with vastly different levels of technical expertise. The console might be set up and programmed by an expert technician, but then used on a daily basis by operators with less technical training.

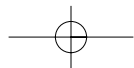
This reality can create problems, and the X-Eight addresses them directly. For example, switches needed only for “off line” console configuration are recessed to prevent inadvertent use. A clean, logical surface layout makes it easy to identify key controls and follow the signal path. Also, the input level indicators have yellow LEDs for signal present (sustained level too low), with green LEDs indicating ideal signal range.

Microprocessor-Controlled MIDI Mute System

The X-Eight’s straightforward Microprocessor-Controlled MIDI Mute System provides a maximum amount of muting flexibility with ease of operation. Eight manual mute groups are provided, each with a dedicated activation switch on the Master panel. Any number of manual groups may be active at once, except when the system is placed in “Last Pressed” (interlock) mode. In addition, the system includes 128 MIDI-based sequential scene mutes which can work alone or in conjunction with the manual mute groups, local mute buttons, or both. Scene mutes can be controlled by external MIDI signals, and each of the 128 mute scenes may be preset to issue a MIDI program change command to external effects or lighting devices.

Sound Fundamentals

The sonic performance of the X-Eight is sure to please discriminating audience members, even when the console is pushed hard in demanding applications. To maintain high headroom with low noise, X-Eight circuits employ only the latest generation of integrated circuit (IC) devices running on 19V rails. Microphone preamplifiers are a proprietary discrete design utilizing multiple transistors for extended headroom and lower noise. In the Crest tradition, phase shift has received special attention. X-Eight consoles exhibit no more than +/-30 degrees of shift from input to output, which is significantly better than consoles costing considerably more. To help keep outside interference to a minimum, the X-Eight has separate ground-compensated insert sends and balanced returns.





Wide Range of Configurations

All X-Eight consoles are available in 24+4, 32+4, 40+4 input channel versions, and frames may be short-loaded (in four input channel blocks) for future expansion. Basic configuration for all consoles includes Master and Group modules (either RT or HS), plus four stereo input modules which can serve as effects returns. All other inputs may be ordered as mono-mic/line or stereo-line in four channel blocks. This flexibility allows end users to have the “custom tailored” features of a high-priced console, yet still realize the substantial cost savings of the X-Eight.

Built to Defy Murphy's Law

X-Eight consoles are constructed to the same exacting standards as all other Crest Audio products. For impact resistance and serviceability, each input channel has its own discrete, vertically-mounted circuit board. For greater strength and integrity, all circuit boards are the plate-through glass epoxy type, not phenolic. The external frame is fabricated from 14-gauge steel to survive the rigors of the road.

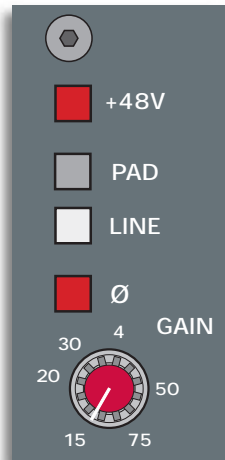
Crest's amplifier engineers designed the X-Eight's power supply to deliver stable voltages and exceptional long-term reliability – wherever you are in the world. Should worse come to worst, built-in facilities for a redundant back-up supply ensure that the show will go on.



Features and Benefits in Brief

The following summary presents important features and benefits of the X-Eight.

Features common to all quality consoles (e.g. 48V phantom power and polarity reverse on mic inputs) are not specifically mentioned, but most appear on the module illustrations.



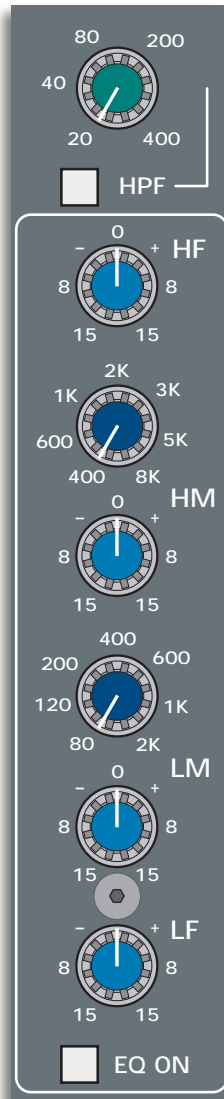
Mono Module Input Section

Versatile Line Input Facilities

On mono modules, balanced line inputs may be connected to XLR or 1/4" connectors, or both. Front panel switches are provided to select mic or line for XLR input, and to select XLR or 1/4" for line source. On stereo line modules, RCA jacks are normalled through parallel 1/4" jacks on the "B" input; "A" inputs are balanced XLR.

Direct Outputs

Direct outputs on all mono input modules provide convenient connection for monitor or effects sends, multitrack recording, or feeds to matrix inputs when generating custom monitor mixes. Jumpers allow source selection as pre-fader/pre-EQ, pre-fader/post-EQ, or post-fader.



Mono Module Input EQ

Sweepable High Pass Filter on All Mic Inputs

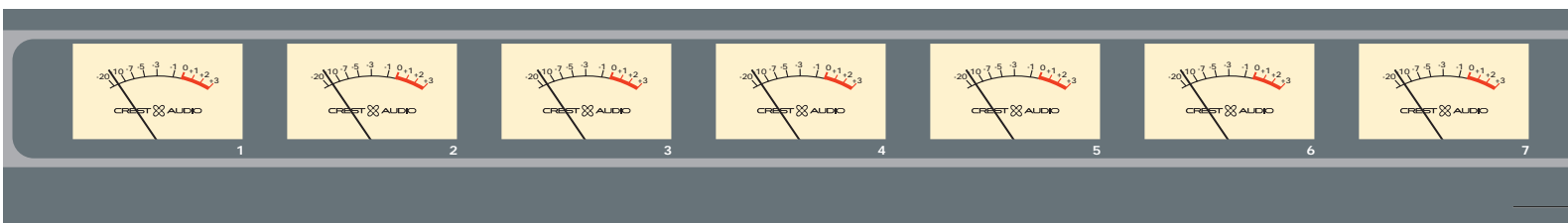
A 12dB/octave filter can be used to cut off unwanted signal content. Roll-off frequency is swept from 20Hz to 400Hz to effectively isolate unwanted noises (wind, mechanical rumble, foot falls, etc.) without compromising desired program material. The High Pass Filter has a push-push switch to select In or Out of circuit. The Line Input has a fixed filter at 80Hz.

Four Band EQ with Swept Mids on All Mono and Stereo Inputs

Each band provides 15dB of boost or cut, with wide overlap for precise problem solving applications. HF is shelving, Mids are bell-shaped.

Shelving Cut and Bell-Shaped Boost on LF Band

Bell-shaped boost provides desired tonal impact without introducing unwanted boominess to overall sound.



The panel features eight auxiliary send controls. Each control includes a 'PRE' checkbox, a fader with a scale from 0 to 40, and a meter. The controls are labeled: AUX 1, AUX 2, AUX 3, AUX 4, AUX 5, AUX 6, AUX 7, and AUX 8. Below the AUX 5-6 and AUX 7-8 sections are 'STEREO' checkboxes.

Aux Send Controls

Eight Auxiliary Send Controls

Ample facilities are available for effects, monitor mixes, broadcast mixes, or other special requirements. Pre- or post-fader sourcing is selectable in three groups: Aux 1-4, Aux 5/6, and Aux 7/8.

Stereo Format Switches for Aux 5/6 and Aux 7/8

Allow configuration for eight mono aux buses, six mono plus one stereo, or four mono plus two stereo. This provides exceptional flexibility for connecting effects devices with stereo inputs, and for generating mixes for in-ear monitoring, recording, or broadcast.



This panel includes a 'MONITORING' section with an 'LCR' checkbox, a 'PAN' knob, and 'L - ODD' and 'EVEN - R' indicators. Below are 'SAFE PREVIEW' (green) and 'MUTE' (red) buttons. A large white display shows the number '1'. The 'ASSIGNMENTS' section features a vertical slider with a scale from 0 to 30 and eight assignment switches labeled 1 through 8. A 'SOLO' button is at the bottom.

Mono Module Input Assignments and Monitoring

Practical Input Signal Monitoring

Microphone inputs have five-segment LED indicators including a variable intensity signal-present LED. Signal-present and peak LEDs also monitor pre-fader signals on the eight groups and three main output buses. All indicators are designed to allow easy setup of gain structure and quick recognition of potential noise or overload problems.

Comprehensive Assignment System

Provides all needed facilities for efficient operation in Mono, Stereo or LCR applications. Discrete bus assignment switches are included for eight groups plus L/R stereo output and mono/center output. LCR mode provides true LCR panning functions on Mono modules, and not simply center bus assignment as found on some consoles in this price range.



A row of seven CREST AUDIO meters. Each meter has a scale from 0 to 20 and is labeled: 7, 8, LEFT, RIGHT, CENTER, SOLO LEFT, and SOLO RIGHT.

The RT-Group Module Block features four channels, each with a MUTE button, a SOLO button, a TALK TO button, a POST FADER button, a level meter, a PAN control, and a TAPE IN button. Each channel also has a PRE button and a GROUP TO AUX button.

RT-Group Module Block

Group and Master Sections

4x12 Matrix from Groups, Left, Right, Mono, and External Inputs

Matrix mixes may be generated for additional loudspeaker zones (under-balcony, foyer, dressing rooms, etc.), or for any other monitoring, recording or broadcast requirements. Sources may be selected pre- or post-fader. External inputs may be routed to respective matrices, or a single input may be selected for all four.

Two Group and Master Versions:

RT (Recording/Theater) and HS (House/Stage) – Two versions avoid the common pitfalls of the “one-size-fits-all” approach to console design: high cost, complex operation, and lack of usable features.

RT (Recording/Theater) Version

Optimized for live performance recording, X-Eight-RT consoles include 8-track tape monitor facilities capable of generating up to two stereo (or four mono) auxiliary mixes. Headphone mixes are a snap when a quick overdub is needed to enhance or correct a recorded track. Group outputs have control facilities separate from their assignment section so as not to interfere with subgroup mixing of the live performance while optimum levels are fed to an external recording device. These same facilities are useful to control special effects outputs by the inclusion of separate microprocessor based muting on group outputs and on group assignments.

HS (House/Stage) Version

Includes switchable five-band output EQ on all primary outputs, and fader reverse (Aux buses to Group faders) when configured as a monitor console. When set to “Stage” configuration, X-Eight-HS can generate up to eight fully discrete monitor mixes, plus four matrixed outputs from the eleven group buses plus external input. This version is particularly suited for use with powered speaker cabinets, since the built-in output EQ reduces the need for outboard processing.

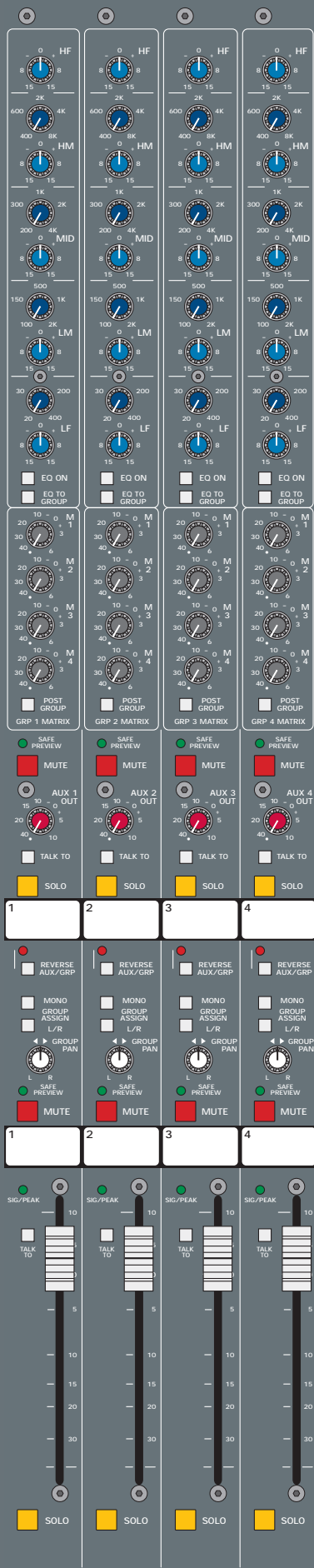
The RT-Master Module Block includes four matrix sections (MATRIX 1-4 OUT), four auxiliary output sections (AUX 1-4 OUT), and four monitoring sections (SUM MONO, SOLO MONO, PINK NOISE, EXT MON). It also features a MUTE button, a SOLO button, a TALK TO button, a POST FADER button, a level meter, a PAN control, and a TAPE IN button. The panel includes a display showing 'X 1 2 7' and a PATCH button.

RT-Master Module Block



The RT-Group Module Block features four channels, each with a MUTE button, a SOLO button, a TALK TO button, a POST FADER button, a level meter, a PAN control, and a TAPE IN button. Each channel also has a PRE button and a GROUP TO AUX button.

The RT-Master Module Block includes four matrix sections (MATRIX 1-4 OUT), four auxiliary output sections (AUX 1-4 OUT), and four monitoring sections (SUM MONO, SOLO MONO, PINK NOISE, EXT MON). It also features a MUTE button, a SOLO button, a TALK TO button, a POST FADER button, a level meter, a PAN control, and a TAPE IN button. The panel includes a display showing 'X 1 2 7' and a PATCH button.



HS-Group Module Block

Input and Output Solo System

Solo switches illuminate when pressed and the channel is on the Solo bus. A switch in the Master section selects either pre- or post-fader listen.

Solo Clear

A Solo Clear switch on Master section illuminates whenever any Solo switch is depressed. Pressing Solo Clear immediately cancels all Solos, and the Solo Clear light extinguishes until the next Solo switch is depressed, allowing quick recognition of Solo system status.

Microprocessor-Controlled MIDI Mute System

Allows mute scene presets with eight manual mutes (all available simultaneously) plus 128 sequential MIDI-based mute scenes for control of both inputs and outputs.

Alternate Output & Monitor Output Sections

Additional output sections control stereo or mono outputs for signal monitoring, or for miscellaneous applications such as subwoofer feeds, broadcast/recording feeds, or additional zone feed. Both output pairs have front panel Sum and Talk To switches, and the Alternate Output may be sourced pre- or post-fader.

Dedicated Assistive Listening Output

Satisfies requirements for providing separate assistive listening feed without sacrificing another needed output. Balanced mono output on XLR connector is a sum of Left and Right outputs.

Talkback System

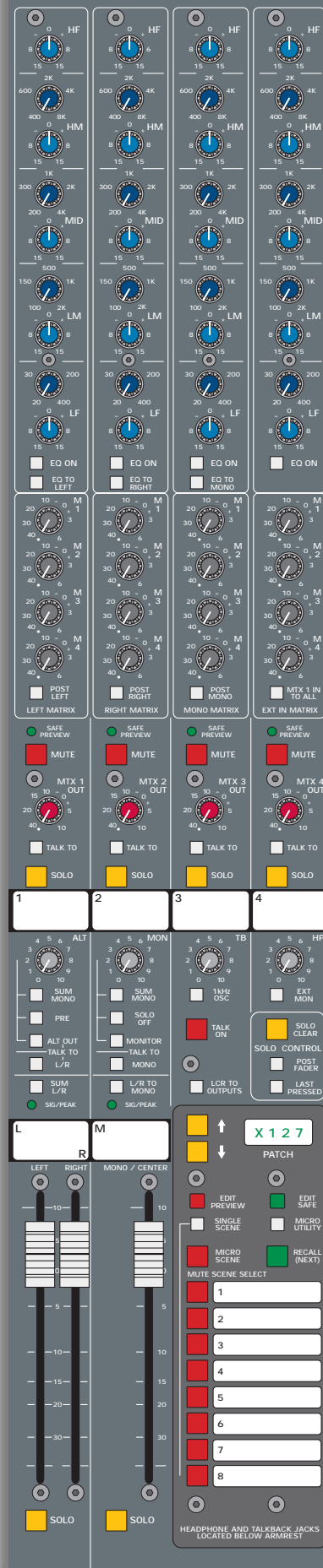
Master "Talk On" switch with level control is on the front panel; an XLR connector is located under armrest with 48V phantom power available. The system allows access to all Primary, Group, Monitor and Alternate outputs.

Mono Operating Mode

Recessed switches on the front panel allow easy configuration for dedicated mono operation. A great many sound systems are operated in mono, and this mode simplifies operation while at the same time allowing quick reconfiguration for full stereo or true LCR operation.

Balanced Outputs on All Primary Buses

This professional interface provides maximum signal drive with a minimum of outside interference. Many outputs, as well as all microphone inputs, may be ordered with optional isolation transformers for even greater protection in extremely harsh electrical environments.



HS-Master Module Block

General Features

Interchangeable Input Modules

Consoles may be ordered with, and retrofitted for, any combination of stereo line or mono mic/line input channels in four-channel module blocks. Console frames may be short loaded using blank panels to allow future expansion.

Professional Insert System

All inserts employ separate 1/4" send and return jacks, not single TRS jacks. Inserts are provided on all mono input modules as well as on Aux, Group and Master Left, Right, and Mono outputs. Separate connectors allow use of common cabling when connecting dynamics processors, equalizers, or other external equipment.

Standard Meter Bridge

Mechanical meters are provided for precise signal monitoring of Main and Group outputs, as well as stereo monitoring of any signal selected for the Solo bus. Mechanical meters are visible in strong sunlight, and solid state illumination eliminates the frustration of burned-out bulbs.

Robust, Universal Power Supply with Backup Facility Standard

The power supply was designed by Crest's amplifier engineers for reliable long-term operation under demanding conditions. Provisions for linking a second back-up power supply are included as a standard feature (no separate linking module required). The standard power supply operates on all frequencies and voltages worldwide with no reconfiguration.

Circuits Designed for Low Noise, Low Distortion, and Minimal Phase Shift

Overall noise and distortion measurements meet or exceed those for other consoles in its class. And, in the Crest tradition, phase shift specifications exceed those of many higher priced consoles. This is vitally important in performance, as excessive phase shift at the console defeats much of the effort expended in phase alignment of the loudspeaker systems.

Options Available

Because the standard console is so comprehensive, few options are needed. Initial option offerings include: spare power supply & interconnect cable, console cover, Littlites™, and isolation transformers for microphone inputs and main outputs.

The Application-Specific Solution

More features. Greater flexibility. Application-specific group/master modules. Superb audio performance. It all adds up to superior value in a high-specification, mid-priced live-sound console. For more details, please contact Crest Audio Inc. directly or your Crest Audio dealer.



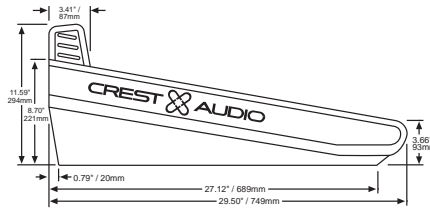


Specifications

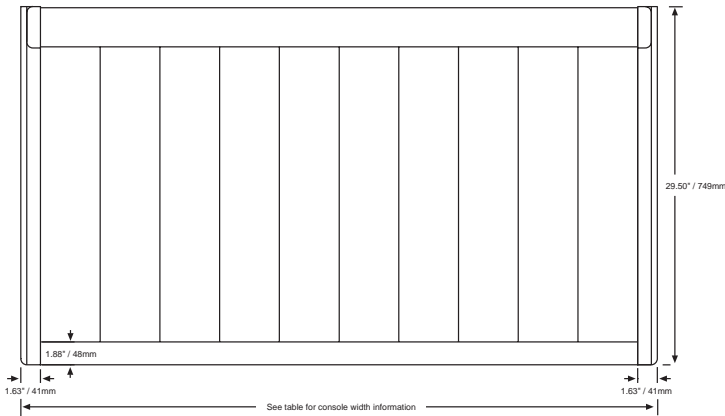
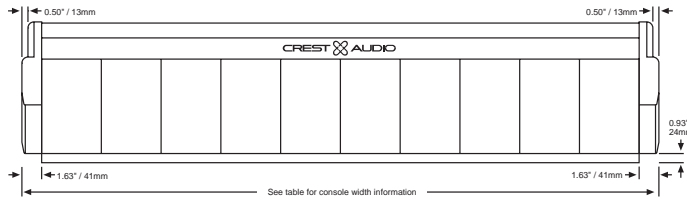
<i>Frequency Response</i>	(Any input to any output) 20Hz - 20kHz Ref 1kHz +/-1dB
<i>THD</i>	Input to Group or Main Output (Left/Right/Mono) (measured at +20dBu output) Better than 0.01% THD at 1kHz <0.01%THD at 20Hz to 20kHz at +15dBu
<i>Noise</i>	(22Hz to 22kHz) Mic EIN Better than -128dBu Mix bus output noise (32 ch routed) Better than -85dBu Residual Output Noise <-90dB
<i>Crosstalk</i>	Channel Mute >80dB Channel routing >80dB Channel fader attenuation >90dB Aux Send attenuation >75dB
<i>Phase Shift</i>	<+/- 30 degrees 20Hz to 20kHz
<i>Mic Inputs</i>	4k Balanced Max Voltage Gain Mic In to Stereo Left/Right balanced out 98dB
<i>Line Inputs</i>	>10k Ω Balanced
<i>Left/Right/Mono Outputs</i>	100 Ω Balanced
<i>Group/Aux Outputs</i>	100 Ω Balanced
<i>Matrix Outputs</i>	100 Ω Balanced
<i>Monitor Output</i>	100 Ω Balanced
<i>Headphone Output</i>	To drive >8 Ω
<i>Insert Sends</i>	50 Ω Ground Compensated
<i>Insert Returns</i>	>10k Ω Balanced
<i>Nominal Output Level</i>	+4dBu (+26dBu into 1k load)
<i>Channel Metering</i>	5 Segment Total RED - Multiple sample point Peak indicator (4dB before clip) GREEN - dynamic SIG(nal) VU metering
<i>Input Channel EQ</i>	
<i>HF</i>	+/-15dB Frequency Shelf 12kHz
<i>HMF</i>	+/-15dB Frequency Range 400Hz to 8kHz
<i>LMF</i>	+/-15dB Frequency Range 80Hz to 2kHz
<i>LF</i>	+/-15dB Frequency Center 100Hz
<i>High Pass Filter</i>	12dB per Octave Frequency Range 20Hz to 400Hz
	Separate On switches for EQ and High Pass Filter sections.
<i>Master Metering</i>	- Eight Group Output Meters - Left, Right, and Mono (Center) Meters - Solo Left and Solo Right Meters - All Meters Mechanical VU type - Solid State meter illumination
<i>Signal Generators</i>	1kHz Oscillator (X-Eight-HS) Pink Noise (X-Eight-RT)



Visit the Crest Audio website for expanded
technical and applications data:
<http://www.crestaudio.com>



Console Width Information
 40 FRAME SIZE: 52.45" / 1332mm
 48 FRAME SIZE: 62.29" / 1582mm
 56 FRAME SIZE: 72.13" / 1832mm



100 Eisenhower Drive

Paramus, NJ 07652

Tel USA 201.909.8700

Fax USA 201.909.8744

<http://www.crestaudio.com>



D7000008

12/30/97